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09/214,453	10/25/1999	PETER FRANCIS LEADLAY		8705

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EXAMINER

KERR, KATHLEEN M

ART UNIT	PAPER NUMBER
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1652

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/214,453

Applicant(s)

LEADLAY ET AL.

Examiner

Kathleen M Kerr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,25,27,31-37,39,44,47-58 and 60-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,25,27,31-37,39,44,47-58 and 60-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Application Status

1. In response to the previous Office action, a non-final rejection (mailed on August 21, 2003), Applicants filed an amendment and response received on December 24, 2003. Claims 26 and 59 have been cancelled, Claims 27, 39, 48, 52, 54, 57, 58, 60-64, 67, and 68 have been amended and Claims 69-70 have been added. Thus, Claims 1, 2, 25, 27, 31-37, 39, 44, 47-58, and 60-70 are pending in the instant Office action and will be examined herein.

Priority

2. As previously noted, the instant application is granted the benefit of priority for the International Application No. PCT/GB97/01819 filed on July 4, 1997 which claims benefit of (1) U.S. Provisional Application No. 60/024,188 filed on August 19, 1996, (2) Great Britain foreign application 9614189.0 filed on July 5, 1996, and (3) Great Britain foreign application 971062.3 filed on May 28, 1997.

Drawings

3. Amended Figures 2b-19, 27, and 29-32 have been filed; new Figure 33, as taken from page 89 of the specification, has also been filed. Said drawings have been approved by the Draftsman and are entered as formal drawings in combination with Figures 1, 2a, 20-26, and 28 of those originally filed.

Withdrawn - Objections to the Specification

4. Previous objection to the specification for containing an embedded figure on page 89 is withdrawn by virtue of Applicant's amendment to the specification and the drawings.

Maintained - Objections to the Specification

5. Previous objection to the specification for a large gap on page 94 of the specification as originally filed is maintained. Applicants argue that the amendment, deleting the gap, clarifies the issue. However, the Examiner maintains that the text, as amended, reads as if a structure belongs in the gap. The terms "(Ac)₄-nor-TKL (R₁=Me, R₂=H, R₃=Me)" and "4-nor-TKL (R₁=Me, R₂=H, R₃=Et)" indicate that a formula is being referred to. Clarification is required, as previously requested. Applicants provided no comment on this issue.

Withdrawn - Objections to the Claims

6. Previous objection to Claim 27 for having improper capitalization is withdrawn by virtue of Applicants' amendment.

7. Previous objection to Claim 44 under 37 C.F.R. § 1.75 as being a substantial duplicate of Claim 2 is withdrawn by virtue of Applicants' amendment to Claim 67 requiring a "functional" PKS which is not a requirement in Claim 2.

8. Previous objection to Claim 68 under 37 C.F.R. § 1.75 as being a substantial duplicate of Claim 2 is withdrawn by virtue of Applicants' amendment to Claim 67 no longer requiring a loading module in the first nucleic acid sequence.

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9. Previous objection to Claim 48 for having redundant language is withdrawn by virtue of Applicants' amendment.

10. Previous objections to Claims 61 and 68 for containing typographical errors are withdrawn by virtue of Applicants' amendment.

Withdrawn - Claim Rejections - 35 U.S.C. § 112, second paragraph

11. Previous rejection of Claim 26 under 35 U.S.C. § 112, second paragraph, is withdrawn by virtue of Applicants' cancellation of said claim.

12. Previous rejection of Claim 59 under 35 U.S.C. § 112, second paragraph, as being indefinite for species *Streptomyces tsukubaensis* is withdrawn by virtue of Applicants' evidence presented as to the nature of the species.

13. Previous rejection of Claim 62 under 35 U.S.C. § 112, second paragraph, as being indefinite for the word "adapted" is withdrawn by virtue of Applicants' amendment.

14. Previous rejection of Claim 63 under 35 U.S.C. § 112, second paragraph, as being indefinite for the term "the KS domain of the extension module which is homologous to said loading module" is withdrawn by virtue of Applicants' amendment.

Maintained - Claim Rejections - 35 U.S.C. § 112, second paragraph

15. Previous rejection of Claim 54 under 35 U.S.C. § 112, second paragraph, as being indefinite for the term "enzyme from the rapamycin system which...effects connection of the

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polyketide chain to an amino acid chain”, which is wholly unclear, is maintained. Applicants’ arguments have been considered but are not deemed persuasive. Applicants’ argue that Schwecke *et al.* “clearly indicate that it is the *rapP* gene which is responsible for the cyclization of rapamycin and linkage of the polyketide chain to the ‘amino group of an enzyme-bound pipicolyl moiety’ ”; the Examiner disagrees. Schwecke *et al.* “propose” this function for *rapP*; this function is not defined. Moreover, another enzyme in the “rapamycin system” could be considered within the scope of the claims. It is wholly unclear if the claim requires *rapP* specifically or any nucleic acid sequence encoding an enzyme with this activity. Clarification is required.

In addition to the above confusion, the claim language now transfers between protein (enzyme) terminology, such as “thioesterase”, and DNA terminology, such as “replaced with a nucleic acid sequence”. Thus, the added language has created confusion in the exact nature of the claimed invention. The overall claim language is confusing and needs to be clarified.

16. Previous rejection of Claim 61 under 35 U.S.C. § 112, second paragraph, as being indefinite is maintained, in part, for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants’ arguments have been fully considered but are not deemed persuasive. Applicants argue that the term “combinatorial module” is clearly defined as found in the claim, that is “said combinatorial module being a contiguous polypeptide sequence extending from a first point in one module to a second point at the corresponding position in the next module”. The Examiner disagrees that this statement is clear. The term “module” in the art is defined minimally as KS-AT-ACP; however, by the definition in Claim 61, a module can be AT-ACP-KS_(of an adjacent module). This concept is totally

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repugnant in the art. Moreover, on page 9 of the specification, combinatorial module is contrasted with “natural modules” but its make-up is still unclear as to its metes and bounds. Moreover, throughout the PKS, adjacent modules are on different genes (onto a different open reading frame). Is this claim intended to encompass the combination of ORFs in the art? The claim is totally indiscernible. In its broadest, gene claimed encodes more than one (“plurality of”) module with some kind of exchange with a heterologous module, seemingly like Claim 1 but drawn to modules instead of domains. The additional language in the claim confuses the subject matter beyond understanding of one of ordinary skill in the art. Clarification is required.

Withdrawn - Claim Rejections - 35 U.S.C. § 112, first paragraph

17. Previous rejection of Claim 52 under 35 U.S.C. § 112, first paragraph, new matter, is withdrawn by virtue of Applicants’ amendment.
18. Previous rejection of Claim 61 under 35 U.S.C. § 112, first paragraph, new matter, is withdrawn by virtue of Applicants’ citation on page 9 of support for the claimed invention.
19. Previous rejection of Claim 67 and dependent Claims 25-27, 31-37, 39, 44, 47-51, 53-60, 64-66, and 68 under 35 U.S.C. § 112, first paragraph, new matter, is withdrawn by virtue of Applicants’ deleting the phrase from Claim 67.
20. Previous rejection of Claim 26 under 35 U.S.C. § 112, first paragraph, written description, is withdrawn by virtue of Applicants’ cancellation of said claim.

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21. Previous rejection of Claim 67 and dependent Claims 25-27, 31-37, 39, 44, 47-51, 53-60, 64-66, and 68 under 35 U.S.C. § 112, first paragraph, written description, is withdrawn by virtue of Applicants' amendment to Claim 67 removing the purely functional limitation.

22. Previous rejection of Claims 39, 57, 59, 60, 64, and 65 under 35 U.S.C. § 112, first paragraph, scope of enablement, is withdrawn by virtue of Applicants' limiting the method claims to using specific host cells all of which are known to naturally produce polyketides.

Maintained - Claim Rejections - 35 U.S.C. § 112, first paragraph

23. Previous rejection of Claims 62 and 63 under 35 U.S.C. § 112, first paragraph, new matter, is maintained. Applicants' arguments have been full considered but are not deemed persuasive. Applicants argue that support for said claims can be found on page 14, lines 5-10. No mention of producing specific ketide types, a clear limitation in the claims, is found at the citation in the specification. Thus, Applicants must cite clear support (page and line number) for the subject matter claimed or must delete the new matter from the application.

Maintained - Claim Rejections - 35 U.S.C. § 102

24. Previous rejection of Claim 1 under 35 U.S.C. § 102(e) as being anticipated by Khosla *et al.* (USPN 5,962,290) is maintained. Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons. Applicants argue that support for type I-type I hybrid is "ambiguous at best"; the Examiner disagrees. Claim 10, supported by the specification as originally filed, *unambiguously* recites type I-type I hybrids comprising "at least two modules of said hybrid modular PKS, each

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module comprising at least ... a KS activity, ... an ACP activity, ... and an AT activity, ... wherein said activities are derived from at least two different modular PKS." These "activity" directly correspond to domains of PKSs as known in the art. Applicants further argue that no type I-type I hybrids could be disclosed by Khosla *et al.* because no other modular PKS gene sequence was known. This argument is not persuasive based on the clear support for type I-type I hybrids as evidenced by the patented Claim 10. For all of the above reasons, the instant rejection is maintained.

Withdrawn - Claim Rejections - 35 U.S.C. § 103

25. Previous rejection of Claims 26, 31-37, 39, 47-49, 55-60, and 64-67 under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.* is withdrawn either by virtue of Applicants' cancellation of said claims or due to the amendment, a new 102(e) rejection is set forth against the claims below now that Claim 67 omits the limitation of a loading domain in particular.

Maintained - Claim Rejections - 35 U.S.C. § 103

26. Previous rejection of Claims 2, 25, 44, and 68 under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.* is maintained. Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons.

Applicants argue that no motivation to combine the references to produce the claimed invention has been set forth or can be found in the prior art of record. The Examiner disagrees. As previously noted,

“At the time of the invention, it would have been obvious to produce the hybrid PKS gene clusters and related products because Khosla *et al.* specifically suggest such hybrids and MacNeil *et al.* provide the “corresponding genes” suggested to be combined by Khosla *et al.* It further would have been obvious to specifically combine loading modules with extension modules because loading modules “function to load the start acyl group on the PKS” (see MacNeil *et al.*) and functional PKS enzymes that, in fact, load a starter moiety are the suggested products of Khosla *et al.* One would have been motivated to combine the above teachings to produce novel polyketides via expression of hybrid PKS enzymes, wherein said novel polyketides can be therapeutically effective antibiotics (see Khosla *et al.*, Abstract and column 1). One would have had a reasonable expectation of success that hybrid type I-type I PKS genes could be effectively produced and expressed and that these hybrid PKSs, when expressed in appropriate host cells such as CH999, would produce novel polyketides due to the explicit suggestion to the fact in Khosla *et al.* and due to the extensive correlation between the avermectin and erythromycin genes described in MacNeil *et al.*”

The Examiner maintains that the declarations of Drs. Simpson and Knowles are not indicative of what “**all** scientists” knew at the time of the invention, despite Applicants’ protest. In view of the clearly extensive credentials of both experts, the Examiner carefully considered all their arguments and answered said arguments painstakingly as required under M.P.E.P. § 716.01(a).

Applicants argue that, on the basis of art dated after the priority date of Khosla *et al.* that includes inventors of Khosla *et al.* as authors as well as on the basis of a gap between the priority date of Khosla *et al.* and the report of a real reduction to practice of the claimed invention, even the inventors of Khosla *et al.* did not expect success of their own patent claims. This argument is not found persuasive based on the presumed enablement/written description of all U.S. patents.

With respect to the MacNeil reference, Applicants argue a difference between recognition of what constitutes a loading module versus being part of the first module. Such limitations, which rely solely on the **name** of a domain, are not found in the claims. Applicants argue that the skilled artisan could not utilize the sequences taught by MacNeil *et al.*; the Examiner

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disagrees since it was well within the skill of the ordinarily skilled artisan at the time of the invention to obtain, via hybridization and sequencing methods, the necessary sequence to practice the claimed invention. The absence of the sequence in a public databases is not automatically an insurmountable deficiency in the prior art. Again, Applicants argue that the prior art does not enable the production of functional type I-type I hybrids – the Examiner maintains that by virtue of the valid U.S. patent Claim 10 to Khosla *et al.*, this argument is groundless.

27. Previous rejection of Claim 27 under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.* and in view of Kao *et al.* is maintained. Applicants' arguments only include an iteration of why previous rejections should be withdrawn. Based on the maintenance of said rejections above, the instant rejection is also maintained herein.

28. Previous rejection of Claims 51 and 52 under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.* and in view of Cox *et al.* (USPN 5,190,871) is maintained. Applicants' arguments only include an iteration of why previous rejections should be withdrawn. Based on the maintenance of said rejections above, the instant rejection is also maintained herein.

NEW OBJECTIONS/REJECTIONS

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

29. Claim 25 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The antecedent basis of “said loading module” is unclear since neither Claim 67 nor 68 contain reference to a loading module as amended. Clarification is required.

30. Claims 25, 27, 31-37, 39, 44, 47-58, and 60-70 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term “functional polyketide synthase” is confusing as to which function is required. None of the instant claims require a “complete” PKS whose function would be to produce a polyketide. In fact, none of the instant claims even extend past a single gene, which indicates that no more than a single ORF is required. The function of these portions of PKSs are distinct from the function of a “complete” PKS. For example, a function dehydratase domain simply affects the removal of a water molecule. Thus, the term “functional” is unclear.

31. Claim 63 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. Items (a) and (b) describe nucleic acid portions, but as written, these items refer to a PKS, which is a protein. Clarification is required.

32. Claims 64-65 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim provides as an option in item (a) using *Streptomyces coelicolor* as a host cell; however, the last lines of (a) exclude the use of *S. coelicolor*. Which is it?

33. Claim 70 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The antecedent basis of the synthase in the preamble of the claim is unclear since Claim 69 is drawn to a gene, not the protein. Clarification is required.

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

34. Claims 69 and 70 are rejected under 35 U.S.C. § 112, first paragraph, new matter, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrase "loading module lacking a ketosynthase (KS) domain" does not

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have adequate support in the specification as originally filed. Applicants argue, based on a previous rejection due to this phraseology, that the sentence on page 6 of the specification describing specifically the DEBS module, saying "The loading module comprises an acyl transferase and an acyl carrier protein" is support for the scope of all loading modules that lack a KS domain. The Examiner disagrees. Thus, the instant rejection is set forth against these newly added claims that contain this claim language. Applicants must cite clear support for the claim language in the specification as originally filed (page and line number) or must delete the new matter from the claims.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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35. Claims 31-37, 39, 47-49, 55-58, 60, 61, and 64-67 are rejected under 35 U.S.C. § 102(e) as being anticipated by Khosla *et al.* (USPN 5,962,290).

Khosla *et al.* teach a “DNA molecule which comprises a recombinant expression system for production of a hybrid modular (Type I) PKS...wherein said activities [KS, AT, ACP, etc.] are derived from at least two different modular PKS” (see Claim 10). Khosla *et al.* teach examples of genes for use in hybrid modular PKS clusters such as erythromycin, tylosin, carbomycin, spiramycin, avermectin, and candicidin (see column 14, lines 26-35). Khosla *et al.* further teach said DNA molecule operably linked to an actinorhodin (act) promoter (see Claim 17) in the presence of “actII-ORF4, an activator gene, which is required for transcription from these [actI/actIII] promoters” (see column 19, lines 38-40). Khosla *et al.* further teach host cells containing said DNAs (see Claims 11 and 18), the production of which host cells inherently require the use of vectors and/or plasmids. Khosla *et al.* also teach methods of making modular PKSs as encoded by said DNA molecules, the product of which methods is the claimed hybrid PKS enzymes of Applicants’ Claim 35. Said methods of making modular PKSs are inherently also methods of making polyketides, as claimed in Applicants’ Claim 39. Moreover, Khosla *et al.* teach that their methods are useful for “efficiently producing both new and known polyketides, using recombinant technology” (see column 3, lines 7-10). Lastly, Khosla *et al.* is replete with teachings of hybrid, (type I) modular PKS genes and enzymes (see for example, column 4, lines 44-65, column 9, lines 38-50, column 13, lines 53-58, and column 25, lines 24-40).

Summary of Pending Rejections

36. The following is a summary of the issues pending in the instant application:

- a) The specification stands objected to for the confusing text on page 94 that preceded a large, confusing gap in the specification as originally filed.
- b) Claim 25 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for antecedent basis of “said loading module”.
- c) Claims 25, 27, 31-37, 39, 44, 47-58, and 60-70 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the term “functional polyketide synthase”.
- d) Claim 54 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the term “enzyme from the rapamycin system which...effects connection of the polyketide chain to an amino acid chain”.
- e) Claim 61 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite is maintained, in part, for the term “combinatorial module”.
- f) Claim 63 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for items (a) and (b).
- g) Claims 64-65 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the option in item (a) using *Streptomyces coelicolor* as a host cell.
- h) Claim 70 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the antecedent basis of the synthase in the preamble of the claim.
- i) Claims 62 and 63 stand under 35 U.S.C. § 112, first paragraph, new matter.
- j) Claims 69 and 70 stand rejected under 35 U.S.C. § 112, first paragraph, new matter.
- k) Claims 1, 31-37, 39, 47-49, 55-58, 60, 61, and 64-67 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Khosla *et al.* (USPN 5,962,290).
- l) Claims 2, 25, 44, and 68 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.*
- m) Claim 27 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.* and in view of Kao *et al.*
- n) Claims 51 and 52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Khosla *et al.* (USPN 5,962,290) in view of MacNeil *et al.* and in view of Cox *et al.* (USPN 5,190,871).

Conclusion

37. No claims are allowed for the reasons identified in the numbered sections of this Office action. Applicants must respond to the objections/rejections in each of the numbered sections in this Office action to be fully responsive in prosecution.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R. § 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen M Kerr whose telephone number is (571) 272-0931. The examiner can normally be reached on Monday through Friday, from 9:00am to 6pm.

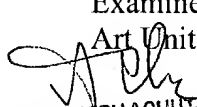
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathupura Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kathleen M Kerr
Examiner

Art Unit 1652



PONNATHUPURA ACHUTAMURTHY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

February 5, 2004